Thomas (T. G.)

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ILLUSTRATED BY CASES

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T. GAILLARD THOMAS, M. D.

PROFESSOR OF OBSTETRICS AND THE DISEASES OF WOMEN AND CHILDREN IN THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

[REPRINTED FROM "ARCHIVES OF MEDICINE," FEBRUARY, 1879]

NEW YORK
G. P. PUTNAM'S SONS
182 FIFTH AVENUE
1879

A NEW METHOD OF REMOVING INTERSTITIAL AND SUBMUCOUS FIBROIDS OF THE UTERUS: ILLUSTRATED BY CASES.*

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PROFESSOR OF OBSTETRICS AND THE DISEASES OF WOMEN AND CHILDREN IN THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

THE gynecologist of to-day in recognizing the important advances in his department, signalized by the discovery of ovariotomy, the cure of vesico-vaginal fistula and reparative operations upon the perineum, the uterus and the vaginal walls, often forgets how much has been done in reference to the extirpation of uterine fibroids of all three varieties. Prior to the present century, and even during the first half of it, the operation of laparotomy for sub-peritoneal tumors of this class was unknown; interstitial tumors were uninterfered with; and he who studies the methods of those who attacked submucous growths by the constricting ligature, will at once appreciate how hazardous, difficult and uncertain were the means at the disposal of the surgeon of the olden time for dealing with them.

The methods of treating sub-peritoneal tumors do not concern the present inquiry, which is limited to the consideration of the surgical procedures most applicable to the removal of those of interstitial and submucous varieties.

* Read before the N. Y. Academy of Medicine, Jan. 30th, 1879.

The key-note to the modern advance in this subject was struck by the late Dr. W. S. Atlee, of Philadelphia, when in the year 1853 he presented to the American Medical Association an essay entitled, "The Surgical Treatment of Certain Fibrous Tumors of the Uterus heretofore considered beyond the resources of Art." This essay received the prize of the association, and to-day stands as the pioneer article in the surgical literature of these grave and often irremediable cases.

Both in this country and in Europe the lead of this bold surgeon has been followed, and the methods which he advocated a quarter of a century ago, and which slowly battled with a pretty decided opposition, have come to be recognized as legitimate surgical resources.

The views of Atlee, as published in 1853, may be epitomized in these three propositions:

First—If a non-pediculated tumor cannot, from the nature of it sattachment and envelopes, be expelled or drawn by mechanical means through a dilated os uteri, it is advisable to make by the knife a means of escape for it into the uterine cavity, through its capsule or enveloping tissues.

Second—If the tumor thus offered an outlet, cannot be removed, it should be forced into and out of the uterine cavity by persistent use of ergot and cutting the cervix.

Third—The tumor, once coming within reach, it should as soon as practicable be enucleated and removed by the surgeon.

That this method of treating such cases is attended by the great dangers of septicæmia, peritonitis, hemorrhage and exhaustion, is not to be denied. But it must be borne in mind that while heroic interference is environed by risks, a Fabian course, a policy of watching, waiting and inactivity is by no means always a safe one. The growing tumor creates exhausting hemorrhages, dangerous mental

depression and anxiety, and disturbance of the functions of nutrition and excretion, which slowly drag the patient down to death. Interference should not be practised unless impending danger urges a resort to it. Cases selected by this rule commonly end in recovery, while non-interference commonly results in death.

The dangers attending strangulation of a uterine tumor by a constricting ligature are now recognized as of so grave a character as to render every cautious surgeon averse to the employment of this method, and although the boldness of the plans recommended by Atlee may appall the timid practitioner, it is now pretty generally appreciated that in apparent temerity there is a degree of safety not to be found in measures which are ostensibly milder and safer.

The plans now usually adopted for the extirpation of submucous and interstitial fibroids may thus be summarized—

1st — Excision.
2d — Torsion.
3d — Avulsion.
4th— Ecrasement.
5th— Enucleation.
6th— The production of sloughing.

Although these methods are, as I have stated, far in advance of strangulation by ligature, to all of them serious objections and deficiencies attach. Excision, from the fact that it is, except in the case of pediculated growths, difficult to reach the point of uterine attachment by knife, scissors or polyptome, is often impracticable. Torsion can be applied only to pediculated tumors. Avulsion and enucleation are difficult of accomplishment, slow of performance, and so exhausting to the patient that she is in danger of sinking in consequence. Ecrasement frequently fails to remove the entire growth, and leaves the uterine attachment to

decompose and cause septicæmia. And the removal of uterine tumors by the establishment of the process of sloughing, insures so certainly the great dangers of septic poisoning, that this method should, in view of the fact that much safer ones are at our disposal, be now regarded as unwarrantable. Instead of the occurrence of sloughing being courted by the surgeon, it should in these cases be feared, and avoided by all the means by which he can oppose its development. One of the great objections to the use of ergot as a means of causing the enucleation or expulsion of large submucous growths is the tendency of the compressing influence of the uterine fibres to impair the nutrition of the neoplasm so completely as to produce its death and decomposition. This fact, and others which are here mentioned, will be fully illustrated by cases which will hereafter be related in this essay.

The object of this paper is to offer a plan which experience leads me to regard as superior to any of these and which I believe will supersede them with all who are willing to give it a fair trial. This method consists in seizing the tumor at its most dependent and accessible point with strong vulsellum forceps, passing up along its sides the spoon-saw or serrated scoop depicted in Fig. 1, and by a gentle, pendulum motion from side to side sawing through the attachments of the tumor and freeing it entirely from its connections with the uterus.

THE SPOON-SAW OR SERRATED SCOOP.—This instrument consists of a steel spoon with a strong handle, twelve or thirteen inches long. The spoon itself is slightly convex upon its outer, and concave upon its inner surface, while its borders are serrated. The saw teeth are blunt and not slanted in either direction, but perpendicular. The outer convex surface protects the uterine wall entirely, while the inner and concave causes the instrument to hug

the tumor and run along its surface as it cuts its way laterally and upwards.

The advantages which experience teaches me attach to this instrument are the following: 1st, the attachments of the tumor are separated by a saw, which greatly limits hemorrhage; 2nd, the shape of the spoon, convex without and concave within, causes it to follow of itself the contour of the tumor unless this be very lobulated, and protect the enveloping uterine tissues from injury; 3d, the highest points of attachment of the tumor are as readily reached as the lowest, the freed growth descending under traction as the saw severs its adhesions in successive sweeps around it; 4th, the saw action gives to the process of separation, whether the growth be interstitial or submucous, sessile or pediculated, rapidity and certainty; and 5th and last, though by no means least, the nature of the spoon-saw secures separation of a growth at the highest point of its attachment, leaving no peduncle to decompose.

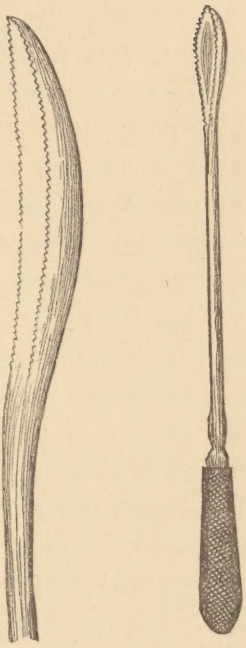

FIG. 1.
The spoon-saw or serrated scoop.

I think that the surest way open to me for demonstrating the positions which I have assumed will be to report a number of cases operated upon by me by the old methods, to point out the advantages which I would now possess in the use of the spoon-saw in those cases, and then to relate instances in which I have employed it in the removal of similar growths since I have begun to use it.

CASE 1.—Large Fibroid expelled through opening made in its capsule.

Mrs. C., residing at Red Hook, N. Y., æt. forty years,

married thirteen years, the mother of one child eight years of age, called upon me by advice of Dr. Bates, of Rhinebeck, and gave me the following history of her case. Four years ago her menstrual periods had ceased for six months, and she began to think that the menopause or pregnancy had occurred, when suddenly they reappeared. At the same time she was disturbed by noticing that her abdomen was enlarging.

From this time the menstrual discharge became profuse, the health depreciated and the strength greatly diminished. The abdominal enlargement steadily increased meanwhile, and at the time that she applied to me, my note book records it as being "as large as in utero-gestation between the seventh and eighth months."

Upon her visit to me, on the 9th of June, 1875, I found Mrs. C. very pale, thin, weak, and bloodless. The appetite was poor, digestion feeble, pulse rather weak and rapid, and the patient's mind much depressed about her condition.

Physical examination revealed the upper portion of the cervical canal expanded as at the commencement of labor, the walls of the cervix thin, and a tumor filling the cavity above and firmly attached to the walls of the cervix, except on one side, the anterior. The uterine sound on this side passed up about five inches, but everywhere else the growth was attached all the way down to the lowest portion of the cervical canal. The tumor which presented was rather soft and I suspected that it might be fibro-cystic instead of purely fibrous. The uterus had, from the history of the case, evidently made determined efforts to

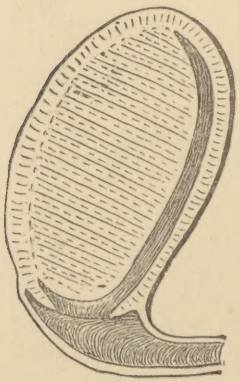

FIG. 2.

expel the tumor; but, on account of its resisting envelope, had entirely failed in doing more than dilating the os externum.

Figure 2, sketched with pen and ink upon the patient's first visit, will convey an idea of the attachments of the tumor.

The patient being unwilling to remain in town, I decided, *first*—to pass a large aspirating needle into the mass, to ascertain if it contained spaces filled with fluid; *second*—if it did not do so, to make an opening into the capsule which would constitute an artificial os for the mass; *third*—to give ergot steadily to excite expulsive efforts on the part of the uterus to force out the growth.

Accordingly, on the 10th of June, with the assistance of Drs. H. F. Walker, and S. B. Jones, Jr., this course was inaugurated at the patient's hotel, and on the next day she returned to Red Hook without inconvenience.

I did not hear from her until a fortnight afterwards, when she wrote that ever since she had returned home, she had suffered from uterine pains of intermittent character, and had had a slightly bloody flow of a disagreeable odor.

From her attending physician, I subsequently ascertained the progress of the case. The pains referred to steadily forced down the tumor through the opening made in the capsule. It presented exactly as a child's head would have done, and after between two and three weeks of a process closely resembling labor, it distended the perinæum and by very firm traction on his part, was delivered. During this time, a most offensive odor was given forth by the mass, and the patient suffered from a certain degree of septicæmia, but subsequently entirely recovered. Unfortunately the tumor, which was large, decomposed, and almost diffluent, was not weighed.

I neglected to say that the attempt at aspiration yielded no fluid whatever. It is probable, however, that the acu-

puncture resulted in the partial death of the badly organized mass, and aided materially in exciting expulsion.

Three years and a half after the expulsion of this growth I was called to Red Hook to visit a niece of this lady, who likewise suffered from a large uterine fibroid. On this occasion I saw and conversed with Mrs. C., and found her to be perfectly well in every respect.

In some respects this is one of the most remarkable cases that I ever met with. The patient recovered after giving birth to the tumor through the artificial os which I had made in the capsule, but she did so at the infinite risk of her life. By the immediate detachment of this tumor by the spoon-saw, and its removal piece-meal, as I would operate now, the dangers would, I know, be greatly diminished.

CASE 2—Was one which I saw with Dr. Charles Hasbrouck of Bergen, N. J.

Mrs. A., aged forty, married, the mother of four children, had always been in perfect health up to the birth of her last child in 1863. After that time she began to suffer from nervousness and general neuralgic pains, and in 1868–9 these symptoms increased, and menstrual disorders began to show themselves. In 1871 menorrhagia was fully established, and she became very much debilitated by loss of blood. She continued to lose strength and flesh, and in 1873 first noticed an enlargement of the abdomen.

In November of that year I was called to see her by Dr. Hasbrouck, and after a careful examination expressed the opinion that a uterine tumor existed, which was probably a fibroid. But as it was possible, though not at all probable, that it might be one of those cases where pregnancy exists while menstruation continues, I did not think it advisable to use the uterine sound to complete the diagnosis at that time, but rather to wait for six weeks or two months, by which time there could be no doubt as to the existence or non-existence of pregnancy.

I did not see the patient again until February, 1874, when upon examining I measured the uterus with the sound, and found that the cavity was about five inches in depth. I made the diagnosis of submucous fibroid, and advised the use of ergot to diminish the supply of blood to the tumor, and also in the hope that the uterus might be stimulated to contract and expel the growth.

Under the influence of the ergot Mrs. A. soon began to suffer from severe uterine pains, and the os became dilated and filled with the tumor, the presenting part being offensive and gangrenous. Dr. Hasbrouck attempted to remove this, but succeeded in detaching only a small portion. As the patient began to suffer very markedly from exhaustion and septicæmia, it was concluded on March 18th, to remove the tumor at once by enucleation, if possible, and I went to Hackensack for that purpose.

I now avail myself of Dr. Hasbrouck's account of the operation, as reported by him to the District Med. Soc. of Bergen Co., N. J.

"Mrs. A. was placed fully under the influence of ether, and removed to a table in a strong light. Sims' speculum was introduced, when the tumor could be seen filling up the partially dilated os. Dr. Thomas seized it with strong forceps, but it was so putrid as to tear on making traction. After removing as much as possible in this way, the doctor succeeded in passing the loop of an écraseur around a part of the remaining undecayed portion of the tumor and removed another large piece, the wire of the écraseur breaking during the process. Having thus cleared the os and cervix of a considerable portion of the tumor, he next, partly by the use of an enucleator, and partly by a process of clawing, succeeded in entirely removing the mass, the whole process occupying upwards of an hour.

"Mrs. A. was then carried to bed after the uterus had been

freely washed out with carbolized water, and the effects of the ether allowed to pass off. She vomited several times, pulse frequent and feeble. Brandy and water were given *ad libitum* and a hypodermic injection of morphia gr. ss. was administered.

"March 19, A. M.—Has passed a sleepless night notwithstanding the free use of brandy and morphia. Pulse, ninety-six; temperature, ninety-nine. Loathes food; perspires profusely; feels terribly sore.

"P. M.—Pulse ninety-six; temperature ninety-nine and a half. Treatment—Quinine gr. iij ter in die; beef-tea and milk; morphia hypodermically and by the mouth in sufficient doses to procure rest. Three grains have been taken during the day.

"March 20, A. M.—Pulse ninety; temperature one hundred; discharge slight, and not so offensive as before operation; continued treatment. The uterus is washed out twice a day with carbolized water, by means of elastic catheter introduced quite up to fundus.

"P. M.—Pulse, eighty-five; temperature, ninety-nine and a-half; the discharge becoming more free and offensive, but not as much so as before operation. Rests tolerably well; still sweats profusely in the morning."

Without giving a detailed statement of the farther progress of the case, I will simply state that from this time Mrs. A. progressed favorably. Her profuse sweats gradually ceased; she began to crave food; and the uterus soon subsided so as scarcely to be felt above the pubes. A few shreds of putrid matter were washed away by the injections, but the discharge soon ceased entirely, and in a short time the patient was sitting up, still feeble but apparently well, in much better health, at all events, than for several years past. The tumor, as nearly as could be estimated from the pieces, was about as large as a small cocoanut.

Were an exactly similar case to submit to operation at my hands to-day, by replacing the "process of clawing" alluded to by Dr. Hasbrouck, by the spoon-saw, I am convinced that ten minutes would accomplish with greater ease to myself and increased safety to the patient, all that "upwards of an hour's" work accomplished by the method which I employed in this case.

The next case demonstrates how perfectly removal of a sloughing tumor will sometimes put a stop to commencing blood poisoning.

CASE 3.—Submucous fibroid enucleated during the progress of septic fever. Recovery. Reported by Joseph D. Anway, M. D.; at that time, House Surgeon, Woman's Hospital, New York.

"Mrs. Mary R., æt. forty-five, married twenty years, has had seven children and two abortions, youngest child ten years' old, duration of illness five months; menstruation began when she was fifteen years old, always regular, no pain, amount always great, time always three or four days. The quantity lost has increased very much during the last two or three years.

"Physical examination.—Uterus is considerably enlarged. The sound passes to the left and backward five and three-fourth inches, seeming to mount up over something situated in the posterior wall.

"Diagnosis.—Submucous fibroid situated in posterior wall, retroflexion. Treatment — Hot vaginal baths; Squibb's fluid extract of ergot, half drachm twice daily. The uterus was put in the position of anteversion, and a Cutter's retroversion pessary, with large bulb, was introduced. December 21st, uterus contracting; patient says she has bearing down pains after each dose of the ergot, which last four or five hours.

"January 6—Has just finished menstruating, This time

the flow lasted eight days, and the quantity lost was much larger than at any time previous. The ergot was increased to one drachm three times a day.

"February 10.—Patient has again menstruated. The time was three days, and the amount the same.

"February 24.—She has gained strength; appears much better in every way; uterus very hard. She is to remain in the hospital two weeks longer, and if there is then no change in the position of the tumor, she is to go home and continue the use of the ergot as she has done here.

"March 8.—Patient has had several quite severe chills during the last four or five days, followed by fever and sweating. On examination, the os was found dilated so as to admit two fingers, and the growth presenting, which had already begun to slough, and the patient was showing some signs of blood poisoning; temperature 103½°

"March 9.—The patient under ether; the cervix was divided on both sides by Dr. Thomas, the growth seized by strong forceps and traction made. At the same time the tumor was enucleated by the finger and scissors, and removed.

"The patient was then put to bed, and ordered thorough washing out of the uterus every five hours.

"March 11, A. M.—Patient doing well; has not had a bad symptom since the operation. The discharge is quite copious, and has a very bad odor. None of it is allowed to remain for any length of time within the uterine cavity. Her appetite is much improved, and she is gaining generally.

"March 22.—Very little discharge; uterus now measures three inches in depth.

"April 8.—Patient says she feels perfectly well. Uterus now measures two and three-quarter inches. Was to-day discharged."

For the report of the fourth case I am indebted to Dr. Stephen W. Roof, of New York, with whom I attended it in consultation.

CASE 4.—Submucous fibroid removed by enucleation. Recovery.

"Mrs. S——, aged forty years, married, has borne three children, the youngest fourteen years old. Has been in ill health for the past two years, complaining of neuralgic pain in head and face; aching, dragging in the back, pelvis and lower limbs; loss of appetite, vomiting, dysmenorrhœa, menorrhagia and metrorrhagia.

"Vaginal touch and bi-manual palpation showed the uterus to be greatly anteverted, considerably enlarged, and quite tender on pressure. Suspecting an intra-uterine growth, I introduced sponge tents, and after dilating the cervix so as to admit the finger, could feel the lower portion of a hard, firm, rounded mass which was firmly attached to the posterior and right side of the uterine wall, above the os internum. The diagnosis of submucous fibroid was made, and as the patient was not suffering very severely at the time; and as there had not been any dangerous hemorrhage, I did not deem an immediate operation justifiable. I accordingly advised the warm water douche to be used several times a day to soften the cervix and render it more yielding, together with the internal administration of ergot, hoping to force the tumor through the external os, and then remove it by écrasement. With this view I gave one drachm of fluid extract of ergot, which acted promptly, but so energetically that I was obliged to control the excessive pain by hypodermic injection of morphia.

"Shortly after this, my patient had a very severe attack of facial neuralgia, with vomiting, which lasted two days, and prostrated her very much indeed. At this time Dr. T. G. Thomas saw her at my request, and after careful examina-

tion, fully concurred in the diagnosis, and advised a continuance of the treatment above mentioned, but the ergot to be given in smaller doses, and as soon as possible the tumor to be drawn down and removed.

"The ergot was given in twenty minim doses every two hours for four days, but as she was evidently becoming more and more prostrated, Dr. Thomas again saw her, and an immediate operation was decided upon.

"On the morning of May 26th, the lady being thoroughly anæsthetized, was laid upon her left side, and the perineum elevated with a Sims' speculum. The os was about three-fourths of an inch in diameter, in which the tumor presented. The tenaculum was firmly hooked into the anterior lip and the uterus drawn down. The cervix was then divided on each side up to the vaginal insertion; the tumor was seized with the vulsellum forceps and an attempt made to draw it out of the uterus and encircle it with the wire rope of Braxton Hicks. Failing in this, a pair of fenestrated forceps were introduced, and a miniature instrumental delivery of the mass attempted, but so extensive was the attachment, that no progress could be made. It soon became evident that enucleation was the only means by which the tumor could be removed, and this difficult procedure was done by Dr. Thomas, in the following manner:

"The mass being firmly held by the vulsellum forceps, a pair of scissors curved on the flat were introduced, and the capsule divided, then portions of the mass were peeled from their bed in the uterine wall by the fingers, and cut away with curved scissors. The operation lasted one hour, and the mass, when removed, weighed four ounces. The hemorrhage was trifling, but the shock severe, and continued three hours before reaction was fully established.

"Intra-uterine injections of carbolic acid, one drachm to a

quart of water, were ordered every twelve hours, and were carried up to the fundus in the following manner: A hard rubber nozzle of a posterior nasal syringe, about the size of a lead-pencil, was warmed in the flame of an alcohol lamp, and its shape altered so as to correspond to the axes of the uterus and vagina, this was attached by a piece of rubber tubing to the nozzle of a Davidson's syringe, through which the injections were safely and thoroughly made. The external genitals were covered with a mass of cotton batting, which had been soaked in a strong solution of carbolic acid and afterwards dried; and quinine given in doses of six grains morning and evening.

"On the morning following the operation, the patient's pulse was one hundred and twenty, temperature ninety-nine, respiration twenty-four; had passed no urine since the operation. The catheter was introduced and the urine drawn, after which the intra-uterine injection was given. This was followed, in half an hour, by a violent chill which lasted an hour and a-half, followed by slight febrile reaction and profuse perspiration lasting through the night. At half-past six this evening, my notes show temperature one hundred and one and one-quarter, pulse one hundred and forty-six. The chill was successfully combated with hot bottles to feet and back, and a glass of hot spiced rum punch, with eight grains of quinine. From this time the quinine has been continued in eight grain doses every twelve hours, the intra-uterine injections made morning and evening, and she has steadily improved without a single untoward symptom."

In this report Dr. Roof says: "The operation lasted one hour and the mass, when removed, weighed four ounces. The hemorrhage was trifling, but the shock severe, and continued three hours before reaction was fully established." By the plan which I am now proposing I feel confident that

the operation would not have lasted over eight or ten minutes, and my impression is that the shock would have been proportionately lessened in severity and duration.

CASE 5.—The late Professor Samuel B. St. John sent to me Mrs. L., a resident of New Canaan, Ct., for supposed rapidly advancing uterine cancer. Her previous history had been one of constant and severe hemorrhages until six weeks before I saw her when a most offensive sanious discharge showed itself, which settled the question of diagnosis.

Upon examination I found that the uterus was occupied by a fibrous tumor almost cylindrical in shape, about the size of a goose's egg, and having a sessile attachment at the fundus. The following diagram depicts the state of affairs:

This mass was sloughing at its lower extremity and thus the symptoms of cancer were developed. Seizing it with a strong vulsellum, and dragging it down with considerable difficulty, I passed the écraseur up as far as I could and cut it off. But I found that in spite of all my efforts, the highest point had not been reached, and that at least one-fourth of the tumor remained, which I could not remove. That night the patient had a profuse hemorrhage, but from this she rallied. After four or five days however, septicæmia developed itself, and to this she succumbed.

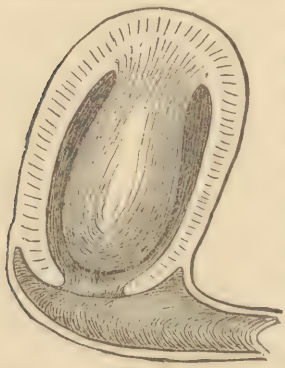

FIG. 3.

CASE 6.—Mrs. S. J. applied to me on account of profuse menorrhagia, which had lasted for several years and greatly enfeebled her. Upon examination I found the uterus considerably enlarged, and proposed dilation of the cervix to ascertain whether a submucous fibroid existed in utero. She informed me that this would be unnecessary, as her

physicians had always been able to touch a tumor within the uterus, whenever she had the expulsive pains which always accompanied menstruation. I awaited this time, and I found that I could then easily touch a hard, smooth tumor through the dilated os, which I estimated as being as large as a hen's egg. It appeared to have just the shape of the tumor described in Fig. 3, Case five. With a good deal of effort, I encircled this with the wire rope écraseur, but could not keep the constricting wire at the point of junction of the tumor with the uterus. About two-thirds of the growth were removed, and the remaining third could not be obtained.

The patient made a good recovery and was much improved by the operation, but she has never recovered completely.

CASE 7.—This case I saw with Dr. C. H. Giberson of Brooklyn, and I am indebted to him for the history of it, which I here give in full, because it so well typifies the dangers and difficulties of such cases.

"Mrs. M., aged 34, married, born in the United States, of nervous temperament and spare habit, the mother of five children, of whom the youngest is two and a-half years.

"She had always been in good health up to about a year since, when increased menstrual flow began, gradually growing worse. Her general health suffered, and the metrorrhagia became so excessive, that during the past summer in the country, flooding was present seven weeks out of ten.

"Early in September, 1871, I was consulted about the case, and on the 18th of the same month, made a vaginal examination. The uterus could be distinctly felt above the pubes; it appeared regular in contour, though unusually large, and was somewhat tender on manipulation. It seemed anteverted, cervix was large, elastic, and congested, lips eroded, external os sufficiently open to admit end of finger, whilst the inner

was about normal, canal of cervix and body measured three and a-half inches. An indurated tender spot was observed to the left of the uterus and distinct from it, apparently in the broad ligaments. She complained of darting pains through it. These pains and the tenderness were always relieved by hemorrhages. The week following this vaginal examination her menses appeared, and in spite of absolute rest in bed, with the employment of local and general treatment, a profuse flow continued ten days.

"Sixteen days later, flooding came on more violently than ever before. Styptics in the uterine cavity, the cervix constantly plugged, and vagina firmly tamponed, only checked without controlling the hemorrhage, which lasted thirteen days.

"November 4th.—Seven weeks after the first examination, owing to the excessive bleeding and increasing size of the uterus, some abnormal growth was suspected within its cavity. Yet the internal os was not more open than in its healthy condition. The organ was anteverted, and had a depth of four inches.

"November 8th.—With cervix dilated, quite a large intra-uterine growth was detected with the sound, firmly attached to the wall of the body.

"November 12th.—Dr. T. G. Thomas saw the case in consultation, and diagnosed fibrous polypus attached high up near the fundus. He recommended an improvement of her general health before any operation for removal should be attempted. He also advised the tampon, with astringents locally, as probably the best means for controlling hemorrhage.

"December 5th.—She has been flowing twenty-one days in spite of our best efforts to arrest it, and her danger is imminent. After consulting with Dr. James K. Macgregor, of Yorkville, who rendered valuable aid throughout the pro-

gress of the case, it was thought best to have the operation performed as soon as possible. Dr. Thomas was communicated with, and coinciding with our views, was invited to perform it.

"December 6th.—The cervix thoroughly dilated and patient under ether, Drs. Thomas and Macgregor present, a more thorough examination was made. The growth could be distinctly felt, firm and smooth, strongly attached by a broad base to the posterior wall from a point just within the cavity of the body up as far as the finger could reach. It was found to be a sessile, submucous, fibroid tumor. Two attempts to secure its base within the loop of a strong cord failed. Dr. Thomas then decided upon enucleation as the best means of removal. With blunt curved scissors he cut through the capsule of the tumor at the lowest point of attachment, and with the finger stripped off a portion of the tumor. He then proceeded to break through the firm fibres connecting the growth with the posterior uterine wall. This was an arduous task, requiring a hand in the vagina, with one finger through the dilated cervix slowly tearing away the tough base of attachment, whilst an assistant crowded down and steadied the uterus by firm pressure above the pubis. His hand becoming fatigued, I continued the same process of separation. This was kept up until the growth was held only by a comparatively small particle to the fundus uteri. The over distention of vagina by hand caused some laceration of its mucous lining, and danger of opening the peritoneal sac was apprehended. She had been under ether an hour and twenty minutes, when, owing to these lacerations, the thinness of uterine wall, and especially the great difficulty in reaching the remainder of attachment, it was decided to desist, confident that nature would effect a complete removal of the tumor. Very little blood was lost.

The uterus was thoroughly syringed with a weak, tepid

solution of carbolic acid; half a grain of morphine injected subcutaneously, and an anodyne suppository placed in the rectum. She rallied quickly and well. Opium was given freely during the first five days after operation. The vagina was syringed every six hours with the above solution, and fomentations kept applied to hypogastrium. The washings gave great comfort, and doubtless served to allay local irritation as well as to lessen the septicæmia. With each syringing fleshy masses and membraneous shreds were brought away. No unfavorable symptoms arose. Urine passed without much difficulty. Bowels remained quiet an entire week. No hemorrhage whatever.

"On the fifth day, after a few sharp uterine contractions, the great bulk of tumor had become completely detached, as was anticipated, and protruded from the vulva. It was the size of a large hen's egg, irregular in shape, with a tough fibrous framework enclosing softer tissues more or less broken down. The microscope showed it to be a true fibroid.

"On the following day, the sixth after operation, a tough thin membrane, evidently the larger portion of the covering of the tumor, was extruded. The progress of case has been satisfactory, and now, the thirty-third day after the operation, she is about the house, has regained some flesh, has almost no discharge, the uterus appears healthy, its depth three inches, position normal, and no hemorrhage has occurred. The regular period for menstruation has passed several days with no indications of its appearance."

Now it is my firm conviction that were I called upon to deal to-day with the three last cases recorded, I could, by the vulsellum forceps and spoon-saw, remove the entire growth in each case "*cito, tuto, et jucunde.*"

I could cite many other cases illustrative of the difficulties attending removal of fibroids by the old methods, but

these are sufficient. Let me assure the reader that these are not selected on account of the difficulties which attended their extirpation. On the contrary, they are really only average cases in this respect, and are selected merely because they illustrate the difficulties attending the procedures with which I desire to compare the method which I offer as a substitute for them.

The following cases illustrate the removal of interstitial and submucous fibroids by means of the spoon-saw.

Before endeavoring to remove a sessile uterine fibroid, it is always advantageous to learn as much as possible about the degree of its attachment. Not that even universal attachment should prevent the removal of the neoplasm by means of the spoon-saw, but because here as elsewhere "knowledge gives power," and creates confidence. I have after trying various methods of doing this, settled upon the use of the flat, elastic, whalebone sound, which is represented in Fig. 4.

FIG. 4.

The manner in which I came to employ this, was the following: Going to the country to remove a submucous fibroid, I endeavored by means of Simpson's sound, Sims' probe, and my own round, elastic, whalebone sound to discover the extent of attachment of the growth, but for some reason could not succeed. Taking then a flat piece of whalebone about six inches long, which one of the ladies present removed on the instant from her dress, I put a knob upon it by touching it repeatedly with melted sealing-wax, and I employed this with perfect success. This improvised sound I took

away with me, and for a year or more employed it on similar occasions. After that Darrow & Co. made one for me, which is represented in Fig. 4.

This sound is used in this way: The index finger of the left hand is placed on the most accessible part of the tumor; then the sound, held in the right hand, is slid up on one side between the tumor and the uterine wall until arrested, when the index of the left hand is placed upon its shaft at the os externum uteri. The sound being then withdrawn, and the finger kept upon it, it is laid upon a sheet of paper or against a black-board, and being curved, a line is drawn from its tip to the indicating finger. Then the sound is passed on the other side, and a similar transfer of its course is made to the sheet or board.

In this way it is possible not only to approximate the truth, but to be wonderfully exact as to it. I have repeatedly demonstrated the efficiency of this sound to classes of students and to medical men, and I feel sure that it leaves nothing to be desired in reference to the determination of the degree of attachment of any uterine fibroid which can be fully touched by the finger. Without this possibility the method is unreliable.

CASE 1.—In June, 1876, I was called by Dr. John Burke of this city, to see with him Mrs. A., a lady forty-seven years of age, the mother of one child aged nineteen years, who had been for four years suffering from a very profuse menorrhagia and metrorrhagia. To such an extent had she been reduced by loss of blood that she was generally confined to her chamber, and suffered from œdema pedum, palpitation of the heart and dyspnœa, upon the slightest exertion. Her appearance was that of one suffering from an exaggerated degree of anæmia, which was rapidly growing worse from repeated and severe hemorrhages. The liver was found to be very much enlarged, as was likewise

the spleen; the former, as we supposed, from fatty degeneration, the latter from malarial poisoning.

Mrs. A. had been examined repeatedly as to the uterine condition during this period, and twelve months before I saw her, Dr. Burke had discovered the existence of a submucous uterine fibroid, supposed to be as large as the egg of a goose. At no time up to June, 1876, did he consider her in a condition fit to admit of an effort at the removal of this, but at that time he called me to decide whether it would not then be possible.

When I first saw her I found the uterus, by conjoined manipulation, as large as it would be in pregnancy at the fourth month, admitting a sound to a distance of five inches, and the tip of the index finger, when force was used, so that a hard, pyriform tumor could be touched in the uterine cavity.

The patient was so much exsanguinated, so much exhausted, and her nervous system so profoundly depressed, that I decided against operation, and she was fully sustained by diet and fresh air, in the hope that a few months would so improve her state as to render operation possible.

I saw her several times after this with Dr. Burke, but instead of getting better, she steadily grew worse, and in September general dropsy set in, affecting the peritoneum and the cellular tissue of the body. We now thought the case decided, and gave up all hope of removal of the uterine growth. In time, however, all the effused fluid disappeared, and about the beginning of January she was so far restored that the question of operation was again agitated. On the 15th interference was decided upon, and on the 28th the tumor was detached and removed.

The following diagram represents the attachments of this tumor:

It was free upon one wall only; attached through-

out the other to within an inch of the os internum.

At midday, on the 28th of January, detachment and extraction were practised in the presence and with the assistance of Drs. Burke, Walker, and Jones. The patient, being etherized, was placed in Sims' position, and his speculum was introduced. The cervix being then caught with the tenaculum, its lips were severed on each side, so as to open the way to the tumor, which could by the finger be felt above before this was done, but now could be quite freely manipulated. A powerful vulsellum forceps was then firmly fixed in the growth, and securely locked. Then, with the spoon-saw, the uterine attachments were rapidly and very easily severed.

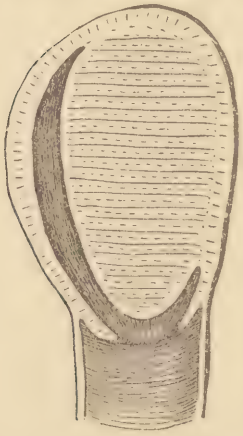

FIG. 5.

I was equally surprised and pleased, as were also my assistants, at the rapidity, ease and certainty with which the sawing motion given to this instrument by the right hand separated the tumor from the uterus, even at the fundus. In a very few minutes I had succeeded in detaching and delivering a tumor which by methods which I have heretofore adopted would have taken, I think, at least a half hour. Indeed I must say that I believe that in the enfeebled state of the patient by no other method could it have been removed without great risk of fatal exhaustion.

The tumor weighed seven and a-half ounces, and measured, in its long diameter, four inches, and in its short, three. It resembled in shape and size a large goose-egg, and was composed of the ordinary tissue which characterizes these myomata.

The patient entirely recovered, and is now enjoying good health.

CASE 2.—I assisted Dr. A. C. Post in the removal of a large fibroid in this case at the Presbyterian Hospital about a year ago, and it is introduced here by his permission. The patient was 34 years of age, and had had several abortions, but had never gone to full term. Her prominent symptoms were profuse uterine hemorrhage, leucorrhœa, rectal and vesical tenesmus, with retention of urine and "dragging pains" about back and pelvis.

Upon physical exploration the os externum was found dilated to about the size of a silver half dollar, the uterine cavity measured four and a-half inches, and the posterior lip of the cervix was greatly enlarged and depressed. Through the os could be felt the hard, smooth surface of a fibroid. The impression left upon my mind by a very careful examination of this case upon two occasions will be conveyed by this diagram, which like the rest of course must not be regarded as entirely accurate.

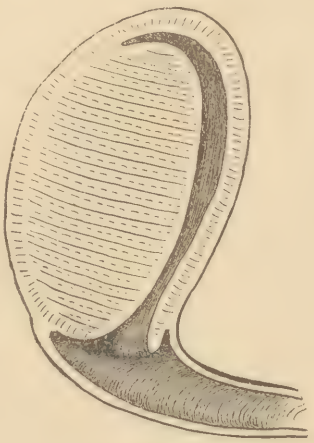

FIG. 6.

Every surgeon at all conversant with such cases will recognize in this one of most formidable character, one which Atlee would have treated by incision, ergot and the influence of "erymacaucis" or putrefaction, and as I did CASE I of the first series which was its counterpart. Dr Post, who very kindly tried the spoon-saw, which was then quite a new instrument, cut through the investing tissue until he could seize the hard, fibrous growth by a strong pair of vulsellum forceps, peeled back the capsule with his finger, and then severing the attachments of the tumor to the uterus by the saw, succeeded in delivering it in forty-five minutes. It weighed exactly seventeen ounces. Although

a sharp hemorrhage followed its removal the patient made an excellent recovery.

Dr. Post expressed himself to me as much indebted to the saw for its removal, but whether he shares my belief that by no other means could this tumor have been removed with a degree of rapidity and completeness compatible with safety, I do not know.

CASE 3.—Mrs. R., a resident of Louisville, Ky., came on to me to be treated for profuse uterine hemorrhages which had lasted for three or four years. Upon examination I found the uterus to be as large as it ordinarily is at the fourth month of gestation and admitting the probe to the depth of four and a-half inches. Upon my expressing the opinion to her that a submucous fibroid existed and proposing to dilate the cervix to make sure of the fact, she assured me that this would not be necessary for she was sure that a hard tumor could be touched inside the womb whenever she menstruated. So positive was she about this that I awaited her next menstruation to decide the question. At that time I found the os dilated, and as she had stated I could distinctly feel a fibrous polypus presenting. By the flat, elastic, whalebone sound I found this to be a sessile growth attached to the posterior wall for about two-thirds of its upper surface and to the anterior wall for a short distance.

Rather than wait and dilate the cervix in an inter-menstrual period I decided to remove the tumor at once. Accordingly Mrs. R. being anæsthetized I cut the rim of the cervix with scissors, seized the tumor with a vulsellum and by means of the spoon-saw rapidly detached and removed the growth.

The patient recovered without an unfavorable symptom, and I received news from her only yesterday to the effect that after the expiration of five months she has almost entirely recovered her health.

CASE 4.—Mrs. X., residing on Staten Island, was seen by me in consultation with Drs. F. E. Martindale and W. C. Walser, when *in extremis* from prolonged and excessive hemorrhage. She was extremely exsanguinated and pallid and the pulse beat steadily at 140 to the minute. We all recognized that operation would in all probability fail to save life, and yet it presented her only chance. All means except extirpation had been used in the effort to check the steady and profuse flow of blood which was sapping her strength, and all had proved unavailing.

We doubted whether she would not die from the process of etherization, but it was regarded as safer to employ it. With the full knowledge of her friends as to the gloominess of the outlook, I proceeded to operate. The tumor was as large as a duck's egg, was as sessile in its attachment as Fig. 7 represents, but could be readily reached through the os which was as large as a half dollar. For any degree of hope to attach to the operation rapidity of execution was absolutely essential. As soon as anæsthesia was complete I seized the tumor with a vulsellum and in a little less than six minutes it was removed.

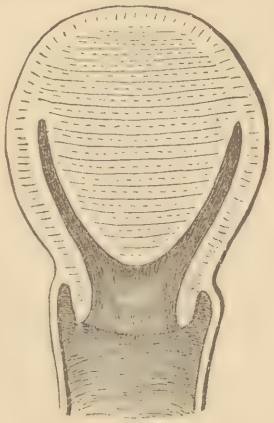

FIG. 7.

No hemorrhage followed and for some days we indulged the hope that the flickering flame of life might be renewed. After that time, however, the patient died very suddenly, and apparently from sheer asthenia.

CASE 5.—This case, one of the most interesting and significant of all which this paper embodies, I saw with Dr. Laurence Johnson, to whom I am indebted for the following history :

Mrs. M. S., born in New York, aged 30, mother of five children, enjoyed excellent health until her fourth confinement in March, 1877, when a small fibrous tumor as large as a hickory-nut was discovered in the posterior wall of the cervix.

In October, 1877, seven months from the discovery of the fibroid, she became pregnant and went on favorably until the 1st of July, 1878, when she consulted Dr. Johnson on account of severe vomiting. On the 10th he examined physically and "found a tumor well nigh filling the pelvic cavity. Its attachment was to the posterior wall of the uterus, while the os could be felt high up behind the symphisis pubis."

Dr. Johnson goes on to say: "Dr. Emil Noeggerath saw her with me on the 11th and as labor seemed imminent, advised to make pressure against the tumor by the use of *Barnes' dilators*, thus flattening it and hastening labor. This plan was put into effect at 2 P.M. and was entirely successful. Strong pains were produced in a few hours, a large bag of waters displaced the dilator, and about 8 A.M., July 12th, she was safely delivered of a small child, which presented by the breech. The babe died in convulsions about 24 hours later."

The pressure of the tumor against the sacral plexus of nerves must have been exceedingly great, for the labor was followed by almost complete paraplegia which existed, in spite of remedies, at the time when I removed the neoplasm, October 1st, 1878.

I operated, the patient being thoroughly etherized, in the presence of Drs. Laurence Johnson, Warren, Walker and Jones.

The tumor was found to be interstitial, imbedded in the posterior wall of the uterus and projecting downwards below the os externum. The following diagram will convey a correct idea of its relation.

The patient being placed upon the left side, Sims' speculum was introduced, and the cervix uteri exposed to view. Seizing the enlarged posterior lip with a tenaculum and dragging it firmly downwards, I cut through the uterine tissue, across the most dependent and accessible part of the tumor, until its white, fibrous structure was seen. Still pulling upon the tenaculum, I now detached the adherent uterine tissue from the tumor by my index finger for a little space, and then seizing the tumor itself with a pair of powerful vulsellum forceps, drew it forcibly down into the opening I had made. Now pulling steadily with the forceps, I inserted between the neoplasm and the uterine tissue the spoon-saw, and by gently swaying its upper serrated extremity from side to side and around the circumference of the growth, easily, rapidly, and almost bloodlessly detached it. In a few minutes, the time seeming surprisingly short to every one, the tumor was drawn forth in the grasp of the forceps.

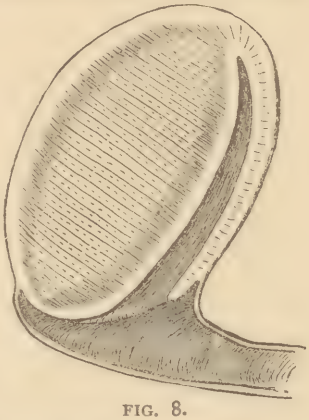

FIG. 8.

The extensive nest left upon its removal was now tamponed with thymolized cotton, which was sustained in position by a vaginal tampon. In twenty-four hours the latter was removed by Dr. Johnson, and in forty-eight the former likewise. After this, the empty nidus of the tumor was thoroughly syringed out with thymolized water, once in every twelve hours. The patient made a good recovery without the development of a bad symptom.

The tumor which weighed eight ounces, measured in its long diameter, four and a-half inches; and in its short three and a-half inches. It was hard, dense and white in structure, presenting several lobulations upon its surface.

In removing this tumor I entertained great fears of passing through the attenuated uterine structure and opening into the peritoneum, and as the growth left its bed I passed in my finger with great solicitude, to ascertain whether such an accident had occurred. I was gratified to find that it had not done so.

It may of course be an illogical deduction, but it is my belief that by any other instrument than that employed, it would have been scarcely possible to have avoided that untoward occurrence.

It is now four months since the operation was performed, and in reply to an inquiry from me, Dr. Johnson says that the patient has steadily improved, though the paralysis has not yet disappeared.

CASE 6.—In this case a patient presented herself for removal of a fibrous polypus almost as large as a hen's egg, which had a pediculated attachment as large as the index finger near the fundus. It was a typical case for the use of the écraseur or galvano-caustic wire, and one in which either of those methods would readily have accomplished removal. Indeed it might have been removed by torsion, avulsion or excision. I determined, however, to try the spoon-saw, by preference, to compare its action with that of the means just mentioned.

Fixing the vulsellum forceps in the lowest part of the tumor, I made firm traction upon it so as to put its pedicle upon a stretch. Then passing the saw along its sides until it was arrested, I gently swayed it from side to side using very little force, when in less than two minutes, the tumor escaped through the dilated os with almost no hemorrhage.

I stated that the removal of this fibrous polypus by galvano-cautery, écrasement, torsion, avulsion or excision, would have been easy. By the means adopted it was still easier than it would have been by any of the methods mentioned.

I have employed this method in numbers of other cases, and never met with an accident which could be attributed to its use; but the number here recorded is sufficient.

It may be asked whether I am so sanguine as to believe, or so thoroughly convinced as to recommend, that the use of the spoon-saw should supersede all other methods in the removal of submucous and interstitial fibrous tumors. I unhesitatingly answer affirmatively to both questions, and willingly leave the proposed method to the test of experience. In general terms, I would say that in any case in which the vulsellum forceps can be firmly fixed in a fibrous tumor of a size sufficiently small to admit of delivery by the vagina, detachment of it from the uterus can always be accomplished by this method.

I do not say of course, that in doing this, the uterine wall may not be cut through and the peritoneum opened into, but I do declare that no such accident has yet happened in my practice of this means, while it has done so with the écraseur. I would go further and assert my firm belief that such an accident is much less likely to occur from the use of this plan, than from that of enucleation as ordinarily practised.

It must be remembered that the use of the saw is not the only means brought into action, strong traction upon the tumor is added to this as an essential adjuvant.

Before concluding, I will avail myself of the opportunity for saying a few words concerning the delivery of very large tumors, which occupy the vagina after expulsion from the uterus. The tumor although susceptible of detachment, is so large as to render its delivery without diminution of size, impossible. In a general way it may be said that any tumor which can be completely accommodated in the pelvis, can be delivered *per vias naturales*, without diminution in bulk. But sometimes a projecting portion of

a tumor may fill the pelvis completely, and a still larger portion may remain above the superior strait, which cannot be drawn through without mutilation.

The plans which I would recommend for the delivery of these large growths, are the three following:

First, the tumor seized by strong vulsella or by the obstetric forceps may be drawn down, the distended perineum severed to the sphinter ani, the uterus partially or completely inverted, the tumor detached by the spoon-saw, the uterus immediately replaced, and the perineal section closed by suture.

Second, the tumor may in successive sections be encircled by the galvano-cautery wire, and piece by piece cut away as was successfully done by Dr. J. Byrne, in a case published in the *American Journal of Obstetrics*.

Third, by a large trocar and canula, the actual cautery or the trephine obstetric perforator, a channel may be made for some distance up the middle of the tumor. Then by strong scissors or by Davis's cranial osteotome, pieces of the growth may be successfully cut away, until the whole mass becomes so diminished in size, that it is susceptible of delivery.

That all of these methods are far more in accordance with good surgery and safe practice, than the less rapid plan of mutilation of the tumor and production of sloughing, I have not the slightest doubt from my observation and experience.

Some of these cases have already appeared in print, but I trust that I may be pardoned for introducing them here as they are cited merely in support of the position which I take in this paper, and a mere reference to them as they appear elsewhere would not answer the purpose.

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